

Comparison of prediction intervals for exponential record values

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ORAL PRESENTATION (20 minutes)

Abstract

Record values from an underlying exponential distribution and associated statistical inference have been studied extensively in the literature.

We focus on general, non-necessarily equal-tailed prediction intervals for future upper record values based on Pivot statistics which, in the equal-tailed case, have been examined before in different settings by Arnold, Balakrishnan and Nagaraja (1998), Awad and Raqab (2000), Raqab (2007) and Asgharzadeh and Abdi (2011). The relationships are discussed.

In this talk, several exact and approximate prediction intervals are considered for known as well as for unknown location parameter. The resulting intervals are compared in terms of probability of coverage and expected length. Finally, a procedure for determining a favored prediction interval is proposed by using a simulated data set of record values.

References

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3. Awad, A. M. and Raqab, M. Z. (2000). Prediction intervals for the future record values from exponential distribution: Comparative study. *Journal of Statistical Computation and Simulation* **65**, 325–340.
4. Raqab, M. Z. (2007). Exponential distribution records: different methods of prediction. In *Recent Developments in Ordered Random Variables*, M. Ahsanullah and M. Z. Raqab (Eds.), 239–251. Nova Science Publ, New York, NY.